

Attorney's Docket No. TN-247
Amendment With RCE

Serial No. 09/989/820
06/02/03

AMENDED CLAIMS

The pending claims as amended are as follows, set forth herein as per the new amendment procedure.

1-5. (cancelled previously).

6. (previously amended and amended hereby) A printed circuit board comprising:

at least three layers of material, such that two of the layers of material are electrically conductive and the third layer is an electrical insulator and wherein the insulating layer is disposed between the conductive layers; and

at least one conductive stake inserted into a through hole established in the printed circuit board for forming a via or electrically connecting foils from the two conductive layers together;

wherein the conductive stake has conductive substantially straight and longitudinal fins attached along a length of the conductive stake, and is inserted such that at least one of said substantially straight and longitudinal conductive fins are larger than the internal diameter of said through hole causing said fins to bite into said circuit board so as to establish makes contact with the foils for forming the via.

7. (original) The printed circuit board of claim 6 wherein the conductive stake has a polygonal shape and is inserted such that at least one point of the polygonal shape makes contact with the foils for forming the via.

9. (original) The printed circuit board of claim 6 wherein the conductive stake is substantially disposed within the printed circuit board.

10. (original) The printed circuit board of claim 6 wherein a portion of the conductive stake extends beyond a surface of the printed circuit board.

11. (previously amended and amended hereby) A printed circuit board comprising:

at least four conductive layers of material; and

at least two conductive stakes inserted into a single through hole from opposing

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sides of the printed circuit board for forming at least two different vias, one via electrically connecting together foils from two of the four conductive layers and the other via electrically connecting together foils from the remaining two of the four conductive layers;

wherein at least one conductive stake has conductive substantially straight and longitudinal fins attached along a length of the conductive stake, and is inserted such that at least one of said substantially straight and longitudinal conductive fins make contact with foils from two of the four conductive layers.

12. (original) The printed circuit board of claim 11 wherein at least one conductive stake has a polygonal shape, and is inserted such that at least one point of the polygonal shape makes contact with foils from two of the four conductive layers.

14. (original) The printed circuit board of claim 11 wherein at least one of the conductive stakes is substantially disposed within the printed circuit board.

15. (original) The printed circuit board of claim 11 wherein a portion of at least one of the conductive stakes extends beyond a surface of the printed circuit board.

16. (new) A multilayer printed circuit board with at least one through hole perpendicular to the plane of the layers of the multilayer printed circuit board, said multilayer printed circuit board having at least four trace layers with foil conductors therein and non-conductive materials between each of said four trace layers, said multilayer printed circuit board having lodged within said through hole two conductive stakes, each of said two conductive stakes having an inner side, the inner side of each stake directed toward a center of said through hole, there being a space within said through hole separating said inner sided of said two stakes, said two conductive stakes providing electrical contact to at least two conductive foils in two of said trace layers separated by a layer of non-conductive material, thus establishing by each said conductive stake an electrical pathway between said foils.

17. (new) A multilayer printed circuit board with at least two partial through holes, aligned in a perpendicular axis to the plane of the layers of the multilayer printed circuit board, said multilayer printed circuit board having at least four trace layers with foil

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conductors therein and non-conductive materials between each of said four trace layers, said multilayer printed circuit board having lodged within each said partial through hole a conductive stake, each of said two conductive stakes having an inner side, the inner side of each stake directed toward the partial through hole in which the other conductive stake is lodged, there being at least a portion of a layer of said multilayer circuit board separating said inner sides of said two conductive stakes, said two conductive stakes providing electrical contact to at least two conductive foils in two of said trace layers separated by a layer of non-conductive material, thus establishing by each said conductive stake an electrical pathway between said foils on opposing sides of said multilayer circuit board, separated by said at least a portion of a layer.

18. (new) The circuit board of claim 16 wherein the conductive stake has a longitudinal polygonal shape such that at least one corner of said polygonal shape when inserted into said through hole extend beyond an internal diameter so as to establish electrical contact with the foils.

19. (new) The circuit board of claim 17 wherein at least one of the conductive stakes has a longitudinal polygonal shape such that at least one corner of said polygonal shape when inserted into said partial through hole extend beyond an internal diameter of said partial through hole so as to establish electrical contact with the foils.

20. (new) A printed circuit board comprising:

at least three layers of material, such that two of the layers of material are electrically conductive and the third layer is an electrical insulator and wherein the insulating layer is disposed between the conductive layers; and

at least one conductive stake inserted into a substantially round through hole of a certain diameter established in the printed circuit board for forming a via or electrically connecting foils from the two conductive layers together;

wherein the conductive stake has a longitudinal polygonal shape such that at least one corner of said polygonal shape when inserted into said through hole extend beyond said certain diameter so as to establish contact with the foils for forming the via.

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21. (new) The circuit board of claim 20 wherein said polygonal shape is a pentagon.